

1 **WHAT IS CLAIMED IS:**

- 2 1. A composition comprising the reaction product of;
3 an unsaturated vegetable oil that has been modified by the addition of an enophile
4 or dienophile having an acid, ester or anhydride functionality; and
5 a functional vinyl monomer.
- 6 2. The composition of Claim 1 wherein the vegetable oil is selected from the
7 group consisting of soybean oil, linseed oil and sunflower oil.
- 8 3. The composition of Claim 1 wherein the vegetable oil comprises soybean
9 oil.
- 10 4. The composition of Claim 1 wherein the vegetable oil comprises linseed
11 oil.
- 12 5. The composition of Claim 1 wherein the vegetable oil comprises
13 sunflower oil.
- 14 6. The composition of Claim 1 wherein the enophile or dienophile is selected
15 from the group consisting of maleic anhydride, fumaric acid, itaconic anhydride and
16 maleate esters.
- 17 7. The composition of Claim 1 wherein the functional vinyl monomer is
18 selected from the group consisting of hydroxy, amine, thiol and oxirane vinyl monomers.
- 19 8. The composition of Claim 1 wherein the vinyl monomer is selected from
20 the group consisting of hydroxyethyl acrylate, hydroxyethyl methacrylate, allyl amine, 2-
21 (tert-butylamino)ethyl methacrylate, glycidyl acrylate, glycidyl methacrylate, and
22 hydroxybutyl vinyl ether.
- 23 9. A process for forming a functionalized vegetable oil derivative
24 comprising:
25 modifying a vegetable oil by the addition of an enophile or dienophile having an
26 acid, ester or anhydride functionality; and
27 reacting the modified vegetable oil with a functionalized vinyl monomer.
- 28 10. The process of Claim 9 wherein the reaction of the vegetable oil with the
29 enophile or dienophile is performed at a temperature of about 200 °C to about 240 °C.
- 30 11. The process of Claim 9 wherein the vegetable oil is selected from the
31 group consisting of soybean oil, linseed oil and sunflower oil.

1 12. The process of Claim 9 wherein the functional vinyl monomer is selected
2 from the group consisting of hydroxy ethyl acrylate, hydroxy ethyl methacrylate, allyl
3 amine, 2-(tert-butylamino)ethyl methacrylate, glycidyl acrylate, glycidyl methacrylate,
4 and hydroxybutyl vinyl ether.

5 13. A latex polymer comprising the polymerization product of:
6 an ethylenically unsaturated monomer suitable for forming a latex
7 polymer; and

8 the reaction product of an unsaturated vegetable oil that has been modified
9 by the addition of an enophile or dienophile having an acid, ester or anhydride
10 functionality and a functional vinyl monomer.

11 14. The latex of Claim 13 wherein the vegetable oil is selected from the group
12 consisting of soybean oil, linseed oil and sunflower oil.

13 15. The latex of Claim 13 wherein the functional vinyl monomer is selected
14 from the group consisting of hydroxy, amine, thiol and oxirane vinyl monomers.

15 16. The latex of Claim 13 wherein the vinyl monomer is selected from the
16 group consisting of hydroxy ethyl acrylate, hydroxy ethyl methacrylate, allyl amine, 2-
17 (tert-butylamino)ethyl methacrylate, glycidyl acrylate, glycidyl methacrylate, and
18 hydroxybutyl vinyl ether.

19 17. The latex of Claim 13 wherein the ethylenically unsaturated monomer is
20 selected from the group consisting of vinyl acetate, vinyl chloride, vinyl ester of a
21 saturated tertiary branched carboxylic acid, acrylonitrile, acrylamide, diacetone
22 acrylamide, 2-ethylhexyl acrylate, 2-ethylhexyl methacrylate, 2-hydroxyethyl acrylate,
23 2-hydroxyethyl methacrylate, glycidyl acrylate, glycidyl methacrylate, acrylic acid,
24 methacrylic acid, butyl acrylate, butyl methacrylate, methyl methacrylate, methyl
25 acrylate, para-acetoxyxystyrene, and styrene.

26 18. A coating composition comprising a blended mixture of:
27 a latex polymer comprising the polymerization product of an ethylenically
28 unsaturated monomer suitable for forming a latex polymer, and the reaction
29 product of an unsaturated vegetable oil that has been modified by the addition of
30 an enophile or dienophile having an acid, ester or anhydride functionality and a
31 functional vinyl monomer;

1 a pigment; and
2 a surface-active agent.